UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/069,088	04/29/1998	SHENG LIANG	06502.0129-0	3016

22852   7590   10/27/2003

FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER LLP
1300 I STREET, NW
WASHINGTON, DC 20005

EXAMINER
NGUYEN, VAN H

ART UNIT	PAPER NUMBER
2126	

DATE MAILED: 10/27/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/069,088	LIANG, SHENG
	Examiner	Art Unit
	VAN H NGUYEN	2126

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *28 July 2003* .

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-6,8-22 and 24-33* is/are pending in the application.

    4a) Of the above claim(s) *5,6,21,22,28 and 32* is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-4,8-20,24-27,29-31 and 33* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) ☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

    If approved, corrected drawings are required in reply to this Office action.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____ .

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

    a) ☐ The translation of the foreign language provisional application has been received.

15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .

4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: .

DETAILED ACTION

1.   This Office Action is in response to the request for reconsideration filed 5/02/2003 and

the response for restriction/election requirement filed 7/28/2003. Claims 1-4, 8-20, 24-27, 29-31,

and 33 are elected for examination.

Claim Rejections - 35 USC § 103

2.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth
> in section 102 of this title, if the differences between the subject matter sought to be patented and the prior
> art are such that the subject matter as a whole would have been obvious at the time the invention was
> made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall
> not be negatived by the manner in which the invention was made.

Claims 1-4, 8-20, 24-27, 29-31, and 33 are rejected under 35 U.S.C. 103(a) as being

unpatentable over **Flynn** (U.S. 6,256,775) in view of **Orton et al.** (U.S. 6,275,983).

As to claims 1, 9, and 17, Flynn teaches a method for time profiling multiple threads of

execution corresponding to a program (*monitoring performance of an application or a system*

program executed by a multithreaded processor ... are detected and recorded by using a software

monitor program running on a thread of the multithreaded processor; abstract), comprising:

- determining whether register data corresponding to a selected thread has changed from

a previous interrupt of all of the threads; and providing an indication of the change for the

selected thread (*if the monitor software determines to terminate or suspend the monitoring*

process ...If the monitor software determines that it should continue monitoring, the monitor

software modifies the register HID0 404... the register HID0 is modified at B. The block-thread-

switch bit indicates the allowance of a threadswitch; col.12, line 37-col.14, line 24 and figs. 4-5).

Flynn does teach *"if the monitor software determines to terminate or suspend the*

monitoring process in box 422, i.e. the stop monitoring flag="1", the thread designated for the

monitoring process (the monitoring thread) will be released and/or used for other processes by

the multithreaded processor via a clean up process in box 424, and the monitoring process is

ended in box 426. The data processing system 10 is then restored to a normal mode, i.e., a

running or executing mode without monitoring" (col.12, lines 50-67).

Flynn, however, does not explicitly teach periodically interrupting execution of all of the

threads.

Orton teaches periodically interrupting execution of all of the threads (*Each thread has a*

suspend count, which is incremented and decremented by these operations... Threads can be

terminated explicitly. They can also be interrupted from the various possible wait situations

and caused to resume execution with an indication that they were interrupted; col.11, lines 10-

63).

It would have been obvious to a person of ordinary skill in the art at the time the

invention was made to combine the teachings of Orton with Flynn because it would have

provided the capability for allowing dynamically profiling the application or the system program

and to provide insight into the performance characteristics of the application or the system

program.

As to claims 2, 10, and 18, Flynn teaches accessing stored data corresponding to the selected thread and comparing the stored data with register information stored following a previous interrupt (col.11, line 38-col.12, line 67).

As to claims 3, 11, and 19, Flynn teaches computing a value corresponding to the stored data and determining a relationship between the computed value and the previously stored register information (col.11, line 38-col.12, line 67).

As to claims 4, 12, and 20, Flynn teaches updating a memory segment to reflect that the selected thread is running when it is determined that the computed value and the previously stored register information do not match (col.11, line 38-col.12, line 67).

As to claims 8, 16, and 24, the rejection of claims 1, 9, and 17 above is incorporated herein in full. Claims 8, 16, and 24 further recite " indicates that the thread is running by comparing the information to stored information from previous interrupt of all threads."

Flynn teaches indicates that the thread is running by comparing the information to stored information from previous interrupt of all threads (col.11, line 38-col.12, line 67).

As to claim 13, refer to claim 8 above for rejection.

As to claim 14, Flynn teaches updating the previous register information based on the computed value (col.11, line 38-col.12, line 67).

As to claim 15, Flynn teaches providing an indication corresponding to a portion of the program containing the selected thread (col.11, line 38-col.12, line 67).

As to claim 25, refer to claim 1 above for rejection.

As to claims 26 and 30, Flynn teaches assigning a cost indicator to an identified portion of the program that is active when it is determined that the selected thread is running (col.11, line 38-col.12, line 67).

As to claims 27, 29, 31, and 33, Flynn teaches the cost indicator reflects a number of cycles the selected thread was running in the identified portion of the program (col.11, line 38-col.12, line 67).

Response to Arguments

3.   Applicants' arguments filed 5/02/2003 have been considered but are moot in view of the new ground(s) rejection.

Applicants arguments presented issues which required the Examiner to further view the previous rejection. The Examiner conducted a further search regarding the issues mentioned in Applicant's response. Therefore, all arguments regarding the cited references of the previous rejection are moot in view of the new grounds of rejection.

Conclusion

4.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

5.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to VAN H NGUYEN whose telephone number is (703) 306-5971.

The examiner can normally be reached on Monday-Thursday from 8:30AM - 6:00PM. The

examiner can also be reached on alternative Friday.

Any inquiry of a general nature or relating to the status of this application or proceeding

should be directed to the receptionist whose telephone number is (703) 305-9000.

Any response to this action should be mailed to:
Commissioner for Patents
 PO Box 1450
Alexandria, VA 22313-1450

or fax to:
(703) 746-7239 (for formal communications intended for entry)
(703) 746-7238 (for After Final communications)
(703) 746-7240 (for informal or draft communications)

VHN
October 19, 2003

JOHN FOLLANSBEE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100